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## ADDITIONAL NOTICES.

(Printed by order of Council.)

1. *Volcanic Eruption in the Azores.*

(Communicated by the BOARD OF TRADE.)

A VOLCANIC eruption of short duration occurred in the month of June last, in the bed of the sea, near the island of Terceira in the Azores. Information of it was communicated to our Vice-Consul at Fayal, by J. Read, Esq., H.B.M. Vice-Consul at Terceira, in a despatch dated the 6th of June. He said, "I am induced to acquaint you that a submarine explosion took place on the 2nd instant, at about six or seven miles to the north-west of Ponta da Serreta, in this island, under the impression that the commander of any of Her Majesty's ships touching at Fayal may be induced to visit the locality for the purpose of ascertaining the situation and extent of this new danger. Yesterday the Intendent of Marine here proceeded in a boat to the spot, but could not approach as near as could be wished, on account of the emission of steam and tremendous stones that at intervals were hurled into the air. It is calculated that an islet or shoal is there formed, extending, as well as could be judged, about three miles in an east and west direction. It is distant about three miles from the Serreta rocks, as set down in Captain Vidal's chart of the island."

Information was subsequently received by our Vice-Consul at Fayal to the effect that the eruption still continued on the 6th of June, and that an islet or shoal was formed to the extent of 2½ miles east and west, distant 9 miles from Serreta Point, bearing north-west by compass; lat. 38° 52' N. and long. 27° 33' w. The Intendent of Marine of the Azores has since reported that on the 17th of the month the volcano was completely extinct, that all vestiges had disappeared, and no soundings could be found on the spot at a depth of 320 metres.

2. *Notes on the Yang-tse-kiang, together with Corrections of the existing Charts.* By J. MINETT HOCKLY, R.N., Harbour Master, Shanghai.

[Extracts.]

THE nature of the Yang-tse below Hankow is familiar to all members of the royal and mercantile marine; but that important portion which lies far beyond the limits hitherto thrown open to foreigners, has obtained comparatively little attention. So long as the rebellion was in existence, attempts to explore the Yang-tse, or the districts on its shore, were attended with considerable risk; and since the capture of Nanking and the consequent extinction of the Taiping insurrection, neither the Chinese Government officials nor the representatives of foreign powers have offered any encouragement to adventurous Europeans who might otherwise be tempted to encounter the dangers and inconveniences incident to a voyage of discovery. At the same time it is only fair to the generally inoffensive natives of China to state that, in the opinion of those whose knowledge of Chinese character renders them most competent to give an opinion on the matter, the perils of such a journey are largely over-estimated. A serious error was made in despatching so formid-

able a party to accompany Captain Blakiston's expedition in 1861; for, although the list of "four Europeans, four Sikhs, and four Chinese," appears at first sight sufficiently moderate, one European or at least two, together with one or two natives, would have excited no suspicions, and the expedition would in all probability have succeeded in its original design, of penetrating into Thibet and thence to North-Western India, *via* the Himalayas. The Chinese are naturally and essentially jealous and suspicious, and this fact should be borne in mind whenever another attempt shall be made to explore the portion of the Yang-tse left unvisited by Captain Blakiston. As it is, we owe him a debt of gratitude for the information he has succeeded in collecting with respect to the geography of at least 900 miles of the river, which, but for him, would have remained unknown to the present day.

It is difficult to obtain a correct estimate of the actual length of the Yang-tse-kiang. Its source is in about  $100^{\circ}$  E. long., and it falls into the Yellow Sea in  $121^{\circ} 50'$  E. Its direction, therefore, from west to east corresponds to at least  $20^{\circ}$ , but, as throughout its entire course it persistently winds and often doubles upon itself, the estimate of a total length of 2000 miles may be regarded as rather within than beyond the mark. This vast extent is sufficient to account for the reverence wherewith the Chinese regard the Yang-tse. They call it, in ordinary discourse, *Ta Kiang*, or "Great River," *Chang Kiang*, or "Long River," and still more frequently *Kiang* or "*The River*." A favourite proverbial saying is, "As the ocean is boundless, so is the Yang-tse bottomless," and the greatness of the river enters in various ways into the everyday colloquial language. The name Yang-tse-kiang has received various interpretations, but that to which most credit is now attached by Chinese scholars is, "The River of the Kingdom of Yang," in allusion to an ancient division of China, whereof the river was the southern boundary.

The river has been explored as far as Ping-shan (long.  $104^{\circ}$  E., lat.  $28^{\circ} 30'$  N.), but beyond this point, and as far as the embouchure of the Wu-liang River (long.  $100^{\circ} 30'$  E., lat.  $22^{\circ}$  N.), which joins the Yang-tse on the left bank, the stream is navigable. The upper waters are dangerous, in consequence of the rocky nature of the bottom, and of the mountainous regions in the vicinity, which give rise to constantly recurring torrents. The Wu-liang, however, falls into the Yang-tse at a point nearly upon the boundary of the productive districts; and therefore, for commercial purposes, it would be useless to attempt navigation any higher than the city of Li-kiang, which stands at the junction of the two rivers.

If we draw up a list of the most important articles of export, we shall find that the Yang-tse districts almost exclusively supply foreign markets with those articles of luxury and utility for which we are indebted to China. Thus, silk finds its way to Shanghai through the Wusung River, an important tributary of the Yang-tse; and the rarer description of yellow silk is produced in Szuchuan alone, and can find an exit only by the Long River. The most serviceable descriptions of black and green teas are grown upon the slopes of An-huri, Hupeh, and Hunan; the yellow cotton, manufactured into the fabric known as Nankeen, grows within sight of Yang-tse in the immediate neighbourhood of the celebrated city of Nanking. The coal-fields of Hunuan are inexhaustible, as also are the alum-pits of the same province and of An-huri. Copper and iron mines abound in Szuchuan, Yunan, and Hupeh, and although the traffic in metals is at present extremely limited, a time must eventually come when this branch of commerce will be thrown open to foreign enterprise. China ware (Kiangsi), orpiment (Yunan), Indian ink (An-huri), musk (Thibet, Yunan, and Szuchuan), salt (Szuchuan), tobacco (Hupeh), paper (Hupeh), timber (Szuchuan and Kiangsi), are conveyed from their place of production solely by the Yang-tse, which hence will be seen to bear no inconsiderable share in furthering the commerce of the whole world.

The open ports on the Yang-tse are the following:—

*Shanghai*, the largest and most important centre of trade in the valley of the Yang-tse. It deserves especial notice on account of its having been the first port to which the system of a foreign inspectorate of customs was applied. During the rebel occupation in 1853-55, it was arranged between the English, French, and American consular representatives and the Imperial authorities, that, pending the restoration of the rightful authorities, the duties on foreign imports and exports should be collected by foreign commissioners, nominated by the consuls under the approbation of the Chinese. So acceptable did this arrangement prove to all parties concerned, that, upon the opening of other places, the system at first adopted as a merely temporary measure to meet a merely temporary emergency was extended, and is now in full operation at all the treaty ports. In 1861 the trade of Shanghai received an additional impulse in consequence of the opening of Chin-kiang, Kiu-kiang, and Hankow. Since then the amount of trade may be approximately estimated from the subjoined statement of revenue collected during each subsequent year:—

*Shanghai*—Revenue accruing from duties on imports, exports, opium, and tonnage:—

Year.	£.	Year.	£.
1861	390,042	1864	706,648
1862	1,098,748	1865	687,404
1863	1,099,240		
Total for five years ..			£3,982,082

At Shanghai, as at all the ports in China open to foreign flags, the lion's share of the trade, both in imports and exports, falls to Great Britain. Thus, in 1865, the total trade of the ports with *foreign* countries amounted to 39,738,983*l.*, which was thus distributed:—

	£.
Great Britain and British Possessions .. .. .. ..	34,167,531
United States of America .. .. .. ..	2,010,015
France and the Continental States .. .. .. ..	2,019,959
Japan .. .. .. ..	1,541,478
	39,738,983
Add to which, for trade with other <i>Chinese</i> ports ..	49,435,556

Total trade of the open ports for 1865 .. .. 89,174,539

*Chin-kiang* stands on the right bank of the Yang-tse, nearly opposite the affluence of the Yun-ho, or Grand Canal, which connects the Yangtse with the Yellow River and the Peiho, and thus would appear naturally to direct the trade of the northern provinces into the Chin-kiang market. In the year 1842, when this city was captured by the English expeditionary force, it was a place of very considerable importance; but it has since then been frequently made the bone of contention between Imperialists and rebels, by whom its suburbs have been destroyed and its trade completely annihilated. Moreover, the Yellow River has of late years received no attention at the hands of the Government, and consequently the mouths of the Grand Canal opening on that river have silted up, thus interrupting the communication between the northern producing districts and the Yang-tse. Foreign merchants who have settled at Chin-kiang have been grievously disappointed in their expectations of a remunerative trade, more especially as the absence of any safe anchorage-ground has hitherto prevented this place from becoming the outlet for the produce even of the surrounding districts. This drawback is at present in process of removal by the construction of artificial basins, where, it is hoped, junks laden with tea and cotton from the neighbourhood of Nanking will lie. The native governor of the province has undertaken these works, and up to a recent date they were progressing satisfactorily. In the absence of some pro-

vision of the kind, Chin-kiang could never become valuable as a centre of foreign trade, as the rapid current of the river and otherwise bad anchorage throw very great difficulties in the way of lading, discharging, or transhipping cargo.

*Kiu-kiang* is the outlet for the trade of the Poyang lake, which opens into the Yang-tse a little below the city. A considerable amount of the trade in black and green tea passes through this port, the value of that commodity shipped having been, in 1863, 2,126,286*l.*; in 1864, 1,065,644*l.*; and in 1865, 1,902,607*l.*

*Hankow* is the farthest limit of foreign trade in the interior of China. It lies at the mouth of the river Han, a tributary of the Yangtse from the north, and forms the dépôt of the trade of the Hupeh province. Hankow is, properly speaking, a suburb of the prefectural city of Hanyang, which lies on the opposite side of the river Han; but from time immemorial it seems to have been celebrated as a place of great trade, the scene of a continual fair. This is not to be wondered at, as it lies in the immediate neighbourhood of the central city of China—Wuchang, whither traders from all the richest producing districts in the empire continually flock, and where there is always a congregation of merchants not only from every corner of China, but from Thibet and the provinces of Independent Tartary. Of so vast importance is its possession considered, that it changed hands no less than four times during the period 1853 to 1860, when the Taiping rebels held a somewhat divided sway over the adjacent provinces. The staple import of Hankow is tea; but, as it is the meeting-place of traders from all parts of the interior, every description of import finds a ready market.

The Upper Yang-tse alters so rapidly in all its essential features that a chart, unless constantly under correction, rapidly becomes useless. This is the strongest argument in favour of a regularly organised system of surveying, in which the small war vessels belonging to foreign powers might advantageously co-operate with the Chinese steamers which it is to be hoped will sooner or later be devoted to the conservancy of the river. It will, however, first be necessary to induce the native authorities either to place a steamer altogether at the disposal of the officer appointed to the charge of the navigable portion of the Yang-tse, or to afford him such facilities for the discharge of his duties as may enable him to make at least quarterly corrections in the charts. The difficulties of obtaining such a concession have been over-rated, for the Chinese as a rule are open to persuasion, and require but to be convinced of the necessity of a measure, or of the determination of Western Powers to enforce it. To the Consular representatives, therefore, we must look for aid in this matter, as suggestions coming from foreigners in native employ are likely to be over-ruled whenever such suggestions imply the necessity for increased outlay.

The startling alterations noted below furnish the most unanswerable proof of the necessity for such a succession of surveys as is recommended, for although all the errors at present noticeable in the charts are rectified, these rectifications will no longer be safe guides after the lapse of six months or a year.

*Lower Yangtse.—Saddle Islands to Wrecks of 'Hellespont,' and 'Ocean Mail.'*—This portion of the river was surveyed in 1864 by Mr. E. Wilds, Master Commanding Her Britannic Majesty's surveying ship *Swallow*; and the chart constructed on that basis is still sufficiently correct. It is to be wished that Mr. Wild's survey had been completed as far as Wusung, but other duties, and the approach of the hot season, prevented the fulfilment of the original design, and deprived the mercantile community in China of what would have proved a most valuable boon.

*Upper Yangtse.—Wusung to Langshan Crossing.*—Of this there is a manuscript chart constructed by the officers of Her Majesty's ships *Actæon* and *Dove*, during April 1859, and March and April 1861. As far as Centaur Bank

there is no perceptible alteration to be noted, but from this point the indications of the chart are less worthy of confidence. The north-east end of this shoal is rapidly disappearing, while a corresponding increase is noticeable at the north-west end. Passing on to Plover Point we find little or no alteration, but the growth of the north bank towards the southward has modified the condition of the river opposite Southey Knoll, so that the North Bank Buoy, placed close to the edge of the North Bank, now lies w.n.  $\frac{3}{4}$  n. from Plover Point, at a spot where at the time of the construction of the manuscript chart there was 8 fathoms, and which lay exactly in the fairway of vessels going up and down the river.

In the manuscript chart 8 to 9 fathoms are shown to the southward of Hunter and Southey knolls. Now, however, the knolls having shifted close to the south shore, deep water covers their former position, while the southward of that position has been transformed into a network of shoals.

About 4 miles higher up, in the position marked "Shoal-water with several dry patches," in May, 1866, 4 to 5 fathoms were found; the same depth being found close to the north shore under the town of Langshan, which in the chart is represented as a continuation of the shoals just mentioned.

*Langshan to Chin-Kiang.*—Reverting to the chart of 1842, about 11 miles above the former position of the North Tree, which may now be recognised by a broad creek 4 miles above Langshan Pagoda, we arrive at Couper Bank, a growing shoal, dry at low water, outside Green Island. Abreast of this, and on the south bank of the channel, the disconnected shoals laid down in the chart have been replaced by a line of islands with deep water close to. From the western extremity of these islands the course is w.s.w. for  $4\frac{1}{2}$  miles, until arrival between two mud-banks recently formed on either side of the channel upon the edges of the shoal marked in the chart.

*Starling Island.*—Immediately abreast of Starling Island the shoals on the north side have disappeared, and there are now from 7 to 8 fathoms, where, in 1842, there were banks dry at low water.

Opposite Starling Island, to the northward and westward, the shoal marked has become an island, now known as Fishbourne Island, and the channel between it and Starling Island having become impassable, it is probable that before long the two will unite. Close to the north shore, and abreast of the northern extremity of Fishbourne Island, the shoals have washed away, and there are now 6 fathoms immediately under the bank.

*Shayaou River.*—*Bouncer, or Pottinger, Island.*—This cut-off is now completely closed.

The river is here laid down incorrectly, the course steered to pass to the eastward cutting off a large segment at the south-eastern extremity of the island as laid down in the chart. The channel, as indicated, is closed by a mud-bank at the northern extremity of Pottinger Island, but to the westward of the island there is a second channel carrying 8 fathoms throughout. To this there is a good leading mark in the shape of a large tree on the north bank, opposite the northern extremity of the channel. Close by this tree, on the beach, lies the wreck of the steamer *Surprise*.

Opposite the Hsien-yi-mew Creek, on the south shore, the bank has grown to a very considerable extent, seriously narrowing the channel, and thus compelling vessels to keep under the north shore where the water continues deep.

The same remark applies to that portion opposite the Chang-seng Island, where the south bank has in like manner advanced into the stream.

Immediately above this is the Seausha Island, formerly 3 miles in length, but now disappearing so rapidly that in all probability within a year no trace of it will remain.

*Chin-Kiang to Nanking.*—Immediately above the foreign concession at Chin-Kiang-fu, upon the south bank, is a canal, or, more correctly, an enormous

dock, recently dug by order of Li-Hung-Chang, Acting-Governor-General of the two Kiang provinces. The design of this step was to draw the native traders from the left to the right bank, which latter had been deserted at the time of the rebel occupation, and had not regained its former prosperity after the extinction of the Taipings. A proclamation has been issued ordering native vessels laden with produce, salt only excepted, to anchor within this dock, or on the southern side of the river, while the merchants have received corresponding instructions to return to their old haunts in the city and suburbs. Much discontent has been caused by this regulation, and various efforts have been made to obtain a modification of the more important of its requirements. Hitherto, however, although some individuals have succeeded in evading it, it has nominally remained in full force, and there appears to be no probability of its being repealed, at least during the present Governor-General's term of office.

The bank on the north shore, abreast of the eastern extremity of Pih-sin-chau, has grown to a very considerable extent, and narrowed the entrance to the north channel. During the winter months the least water in this channel is 12 feet, and in consequence the south channel is used by all steamers of large draught; native boats, however, frequenting the northern cut-off at all seasons of the year. The bank to the southward and westward of Pih-sin-chau has extended as far as the 10-fathom sounding in the chart of 1842. Between the western extremity of Pih-sin-chau and the entrance of Eching Creek, a semi-elliptical shoal has formed, extending at its widest part to the 6-fathom sounding. This has also had a material effect upon the channel to the north of the island.

Abreast of the hills, 7 miles above Eching, and almost exactly in mid-channel, is a rocky ledge not marked in the chart, but lying longitudinally between the 26 and 12-fathom soundings.

Proceeding up the river to the great bend at the Tsaoou-hea Island, the water has deepened considerably under the north bank, while the island itself has grown out upon its northern and north-eastern shores. The bight abreast of Ping-shan Pagoda has filled up, and the edge of the shoal now lies along the 3-fathom line as laid down in the chart. It is to be noted that the cut-off known as Nanking Creek, has, by a recent regulation, been closed to foreign vessels, and is now used only by native junks and steamers flying Chinese flags.

*Nanking to Wu-Hu.*—We now take the chart of 1858, constructed by Commander Ward and the officers of the *Acteon* and *Dove*. Abreast of the San-shan, the left bank has shoaled to nearly mid channel, but immediately above this place the bank has cut away, and deep water is found close in. Off the three islands placed on the right bank below the entrance to May Queen Channel the water has become very shallow to a point nearly half way across the river.

*Rosina Rock.*—On the left bank, at the entrance of the May Queen Channel, a rock, known as the Rosina Rock, lies at a distance of 200 feet from the bank. The May Queen Channel itself is closing rapidly, and has of late been deserted by foreign vessels. The southern extremity of the island immediately below Wade Island has extended about a mile in a s.s.w. direction, thus seriously narrowing the channel between the islands. The southern extremity of Wade Island has in like manner extended for nearly three-quarters of a mile, and the left bank, a little way above it, has shoaled for about 2 miles. Dearborne Island, abreast of Point Morton, has grown about three-quarters of a mile to the southward, and the left bank, from a point abreast of the island to the fort, is very shallow.

*Rocky Ledge.*—About a mile and a quarter below Wu-Hu, a rocky ledge has been discovered close to the right bank.

*Wu-Hu to Hen Point.*—Immediately abreast of the Wu-Hu pagoda the

water sets in strong eddies, necessitating the greatest care on the part of pilots, especially at night. Indeed the river between Wu-Hu and Lang-Kiang-Ki (Hen Point), both from the strength of the current and the intricacy of the navigation, presents very considerable difficulties and offers the strongest argument in favour of careful periodical surveys. The left bank of Wu-Hu Reach has shallowed, but the islands noted in the chart as "dry in December" have disappeared. About a mile and a half above Su-Kiang is a small rocky island under the right bank, and from this to the San-Shan-Ho the water along that bank has deepened. The northern and eastern sides of Haines Point have extended to mid-channel, at the expense of the opposite shore, which has been cut away and deepened to 15 fathoms. On rounding the Point the left bank will be found to have shoaled for about 400 yards; but the right bank gives deep water close to, as far as Yangkeatsun. The land about Barker Island is incorrectly laid down, the island extending much further to the northward than appears on the chart. Off Kieu-hien, on the shoal marked 2½ fathoms, there are now 7 fathoms, and at the point abreast of the upper extremity of Barker Island the shoal marked has completely disappeared, and 3 fathoms may be found close to the bank. Off Leynliau, opposite Teih-Kiang, the bank has shoaled to a slight degree. From Osborn Reach to Wild Boar Reach the chart is incorrect, the southern channel curving considerably more to the northward than is laid down. In the middle of the southern channel there is an island, to the westward of which lies the course adopted by steamers. Neither the southern nor middle channels, the latter of which is known as Cosmopolite Channel, can be used except after the water has risen 12 feet. In June, 1863, the soundings in the former ranged from 3 to 7 fathoms, and in the latter from 4 to 8.

A third channel to the north of Cosmopolite Channel is that principally used, and to it we confine our attention. The mud-bank on the left shore of Osborn Reach, marked "dry in December," has extended to the southward and westward, while the land above it on the same side, in the neighbourhood of Lauwan, has washed away. On the right bank opposite the Siau-shan-miau village the land has extended a considerable distance into the stream, the channel, however, remaining unaltered. Opposite the western entrance of Cosmopolite Creek, and above a conspicuous tree growing on the left bank, a shoal of no very considerable extent has formed. We note no alterations of importance until we reach Ta-tung, opposite which, on the left bank, a shoal has formed extending to the 5-fathom sounding, as marked in the chart of 1858, while above Ta-tung, abreast of Wu-pa-kau, another shoal has grown on the spot marked "shallow." Arriving at FitzRoy Island, the direct channel is closed at the upper end, and the northern channel is now exclusively used. From the eastern end of the island a most dangerous shoal extends to a distance of nearly a mile; soundings in May, 1866, showing a depth of no more than 4 feet. As this shoal was not seen during the winter of 1865-66, when the water was at least 16 feet lower than in the month of May, we must conclude that it was suddenly formed. The shoal on the left bank, abreast of the upper extremity of FitzRoy Island, has disappeared, and at the place indicated in the chart as shoal there are now 3 fathoms. The river in the neighbourhood of Hen Point is excessively dangerous, principally from the existence of rocks lying abreast of it, and of a spit just above a low point not marked in the chart, but nearly opposite Lang-kyang-ki. In order to avoid this spit, which extends to the 7-fathom mark, vessels on arriving close to the low point mentioned above steer south-east to the opposite side of the river, where there is deep water close to.

*Hen Point to Tung-Liu.*—The junk channel to the north of Jocelyn Island may be used during the winter, the least water at that season being 15 feet. Abreast of Nean-king the bank marked in the chart as dry has not been seen of late; but I am not in a position to state whether or not it has entirely dis-

appeared. The spit off Sandy Point must be approached with much caution, as it is fast increasing in an easterly direction. To the eastward of Christmas Island the Junk Channel has shoaled, while the spit at the southern entrance is rapidly enlarging, an island having formed about a mile to the southward of Red Sand Bluff. From this point to about a mile above Tung-liu the western or left bank is shallow, but may be approached with safety in summer.

*Tung-Liu to Split Hill.*—The bank above Tung-Liu, marked "dry in December," has extended slightly at both extremities. Immediately above it, and in a direct line with it, is a ledge of rocks, upon which the steamers *Sze-chuen* and *Express* grounded in February, 1865, at which date there were 4 feet of water over it. To clear this ledge in winter the course lies within 150 feet of the right bank; but too much caution cannot be observed, as rocks are found close in-shore about 2 miles farther up. The left bank has grown into a semi-elliptical shoal from Whan-yuen-chin to Dove Point, but the Point itself is steep. The channel to the eastward and southward of the island off Dove Point is now known as Ma-tong Cut-off, and may be used in summer, but is considered extremely unsafe. Abreast of Dove Point, on the opposite side of Bullock Reach, a bank has formed, which narrows the channel to a considerable extent; and on the western side of the Reach the sandbank has much increased, thus compelling vessels to keep the left shore well on board from Dove Point to the Little Orphan. Rounding the Reach above the Little Orphan, where in the chart 8 fathoms is marked, a spit has extended from the "low sandy shore" on the left bank; and the channel, therefore, lies close to the right shore above three conspicuous hills which come down to the water's edge. A mile above Remark Rock a wide creek opens on the right shore, leading towards the low hills marked "80 feet." About N.W. by W. from this creek, on the opposite bank, is a point, close to which the channel lies. The sandbank on the right shore has extended half-way across the river for the distance of about 6 miles, and above it the sandbank has been replaced by well-marked land. The channel to the north of the shoal, marked "dry in December," has been closed by the continuation of the shoals towards north-east and south-west from the earth bank to Point Beecher. This shoal is cleared by pursuing a course north-east and south-west from a large tree on the left bank in a conspicuous position below the shoal. The least water found in winter in the channel thus indicated is 18 feet. Off Olyphant Point an island has formed which narrows the entrance to the northern channel. In February, 1864, the depth of water on the bar in the northern channel was 12 feet, and in the southern 8 feet. Immediately above Kiu-kiang the left bank of Seymour Reach, as far as Hunter Island, and a considerable portion of the right bank have shoaled to such an extent as to reduce the width of the channel to a minimum. Arriving at Hunter Island, the southern channel is closed in winter, and on the bar in the northern channel no more than 12 feet water is found. In summer both are passable. When approaching the village of Fu-tse-kan the channel is found to have narrowed considerably by the increase of the banks on both sides.

*Split Hill to Wu-chang-hsien.*—Abreast of Havoc Rocks, in mid-channel, a rock, 3 feet above water, was noticed in February, 1865. The right bank of the river abreast of Kichau, from the hill close to the water's edge, marked "150 feet," to a point abreast of hills a mile inshore, marked 200 feet, has shoaled to an alarming extent, making the channel dangerously narrow during the winter months. The right bank below Kitau has grown to the "5-fathom" sounding, and above Lee Rock, on the left bank, the shoal has extended slightly beyond the same sounding; thus rendering the utmost care and circumspection necessary while passing both bends. From 300 to 500 feet from the left shore immediately above Whuy-lung-ki Hill, a very dangerous ledge of rocks, not marked on the chart, is to be found. The Pa-Ho Reach, above Collinson's Island, is full of shifting shoals, which it would be

vain to attempt to describe, as their relative positions with regard to one another and to the banks of the river change with the utmost rapidity. The sole guide, therefore, is experience, which can only be gained either at the expense of continual trips up and down, or from the observations of the captains of the steamers that constantly navigate the river between Wusung and Hankow.

*Wu-chang-hsien to Hankow.*—The channel to the westward of Gravener Island is filling up, and must be considered unsafe. The bank above the island, marked “dry in winter,” is now well-marked land. On the right bank, nearly abreast of a clump of trees a little above Sang-kiang-kau, a new channel has opened,—not, however, yet surveyed. Its direction is n.w. by w. In the Lo-koh-hi Reach, of Yang-kia-chan, a shoal has extended from the left bank to the 6-fathom sounding; and immediately above this a bank has risen in mid-stream, where in the chart 6 and 7 fathoms are given. As the right bank in the neighbourhood is rocky, the channel adopted lies to the north of the new bank.

Off Lo-koh-ki, and abreast of the bluff, a ledge of rocks has been discovered, about 500 feet from the right bank; and on the opposite side the “sand-bank” has grown to the southward and eastward as far as the 4-fathom mark. After passing Pi-hu-shan, or White Tiger Hill, the right bank of the Yang-lo Reach has extended for a considerable distance; but upon passing the first hill, marked “200 feet,” a course n.  $\frac{1}{2}$  w. for the ruined temple on the left bank escapes the danger. In Pakington Reach, between Sha-kan and the creek above it, the left bank has shoaled to a distance of about half-a-mile. Thence to Hankow the extensive shoals which have formed on the right bank render it necessary to keep the left bank well on board.